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PATENT APPLICATION: US/10/032,214   TIME: 17:10:41

Input Set : **D:\216730us.app**
Output Set: **N:\CRF3\05232002\J032214.raw**

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 3 <110> APPLICANT: PUNNONEN, JUHA
 4         LAZETIC, ALEXANDRA
 5         LEONG, STEVEN R.
 6         CHANG, CHIA-CHUN
 7         APT, DORIS
 8         GUSTAFSSON, CLAES
10 <120> TITLE OF INVENTION: NOVEL CO-STIMULATORY MOLECULES
12 <130> FILE REFERENCE: 02-106730US
14 <140> CURRENT APPLICATION NUMBER: 10/032,214
C--> 15 <141> CURRENT FILING DATE: 2002-12-20
17 <150> PRIOR APPLICATION NUMBER: 09/888,324
18 <151> PRIOR FILING DATE: 2001-06-22
20 <150> PRIOR APPLICATION NUMBER: PCT/US01/19973
21 <151> PRIOR FILING DATE: 2001-06-22
23 <150> PRIOR APPLICATION NUMBER: 60/213,946
24 <151> PRIOR FILING DATE: 2000-06-23
26 <150> PRIOR APPLICATION NUMBER: 60/241,245
27 <151> PRIOR FILING DATE: 2000-10-17
29 <160> NUMBER OF SEQ ID NOS: 320
31 <170> SOFTWARE: PatentIn Ver. 2.1
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35 <212> TYPE: DNA
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39 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
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45 accaaaagag tgaaagaaac agtaatgcta tcctgtgatt acaacacatc cactgaagaa 180
46 ctgacaagcc ttcggatcta ttggcaaaag gatagtaaaa tggtgctggc catcctgcct 240
47 ggaaaagtgc aggtgtggcc tgagtacaag aaccgcacca tcactgacat gaacgataac 300
48 ccccgtattg tgatcctggc tctgcgcctg tcggacagtg gcacctacac ctgtgttatt 360
49 cagaagcctg tttttgaaagg ggcttataaa ctggagcacc tggcttccgt gaggttaatg 420
50 atcagagctg acttccctgt ccctaccata aatgatcttg gaatccatc tcctaatatc 480
51 agaaggctaa tttgctcaac ctctggaggt tttccaaggc cccacctcta ctggttggaa 540
52 aatggagaag aattaaatgc taccaacaca acactgtccc aagatcctga aaccaagctc 600
53 tacatgatta gcagtgaact ggatttcaac atgacaagca atcacagctt cttgtgtctt 660
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55 ccttctgcta atcagcacct gacctggacc attattatcc cagtctcagc atttgggatt 780
56 tctgtgatca ttgcagttat actaacatgc ctgacctgca gaaatgctgc aatacgcaga 840
57 cagagaaggg agaatgaagt ggaaatgcaa agttgctctc agtctccatg a        891
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Input Set : **D:\216730us.app**
Output Set: **N:\CRF3\05232002\J032214.raw**

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66 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
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72 gtgaaagaaa tggcagcact gtcctgtgat tacaacattt ctatcgatga actggcgaga 180
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74 gaagtgtggc ctgagtacaa gaaccgcacc ttccccgaca tcattaacaa cctctccctt 300
75 atgatcctgg cactgcgcct gtcggacaag ggcacctaca cctgcgtggt tcagaagaat 360
76 gagaacgggt ctttcagacg ggagcacctg acctccgtga cactgtccat cagagctgac 420
77 tccctgtcc ctagcataac tgacattgga catcccgccc ctaatgtgaa aaggataaga 480
78 tgctccgcct ctggaggttt tccagagcct cgcctcgcct ggatggaaga tggagaagaa 540
79 ctaaacgccg tcaacacgac ggttgaccag gatttggaca cggagctcta cagcgtcagc 600
80 agtgaactgg atttcaatgt gacaaataac cacagcatcg tgtgtctcat caaatacggg 660
81 gagctgtcgg tgtcacagat cttcccttgg agcaaaccca agcaggagcc tcccattgat 720
82 cagcttccat tctgggtcat tatcccagta agtggtgctt tggtgctcac tgcggtagtt 780
83 ctctactgcc tggcctgcag acatgttgcg aggtggaaaa gaacaagaag gaatgaagag 840
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89 <212> TYPE: DNA
90 <213> ORGANISM: Artificial Sequence
92 <220> FEATURE:
93 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
94        nucleotide sequence
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99  gtgaaagaaa tggcagcact gtcctgtgat tacaacattt ctatcgatga actggcgaga 180
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101 gaagtgtggc ctgagtacaa aaaccgcacc ttccccgaca tcattaacaa cctctccctt 300
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103 gagaacgggt ctttcagacg ggagcacctg acctccgtga cactgtccat cagagctgac 420
104 ttccctgtcc ctagcataac tgacattgga catcccgccc ctaatgtgaa aaggataaga 480
105 tgctccgcct ctggagattt tccagagcct cgcctcgcct ggatggaaga tggagaagaa 540
106 ctaaacgccg tcaacacgac ggttgaccag gatttggaca cggagctcta cagcgtcagc 600
107 agtgaactgg atttcaatgt gacaaataac cacagcatcg tgtgtctcat caaatacggg 660
108 gagctgtcgg tgtcacagat cttcccttgg agcaaaccca agcaggagcc tcccattgat 720
109 cagcttccat tctgggtcat tatcccagta agtggtgctt tggtgctcac tgcggtagtt 780
110 ctctactgcc tggcctgcag acatgttgcg aggtggaaaa gaacaagaag gaatgaagag 840
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115 <211> LENGTH: 912
116 <212> TYPE: DNA
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Input Set : **D:\216730us.app**
Output Set: **N:\CRF3\05232002\J032214.raw**

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125 cagctcttgg tgctcactgg tcttttttac ttctgttcag gcatcacccc aaagagtgtg 120
126 accaaaagag tgaaagaaac agtaatgcta tcctgtgatt acagcacatc cactgaagaa 180
127 ctgacaagcc ttcggatcta ttggcaaaag gatagtaaaa tggtgctggc catcctgcct 240
128 ggaaaagtgc aggtgtggcc tgagtacaag aaccgcacca tcactgacat gaacgataac 300
129 ccccgtattg tgatcctggc tctgcgcctg tcggacagtg gcacctacac ctgtgttatt 360
130 cagaagcctg atttgaaagg ggcttataaa ctggagcacc tgacttccgt gaggttaatg 420
131 atcagagctg acttccctgt ccctaccata aatgatcttg gaaatccatc tcctaatatc 480
132 agaaggctaa tttgctcaac ctctggaggt tttccaaggc cccacctcta ctggttggaa 540
133 aatggagaag aattaaatgc taccaacaca acagtttccc aagatcctgg aactgagctc 600
134 tacatgatta gcagtgaact ggatttcaat gtgacaaata accacagcat cgtgtgtctc 660
135 atcaaatacg gggagctgtc ggtgtcacag atcttccctt ggagcaaacc caagcaggag 720
136 cctcccattg atcagcttcc attctgggtc attatcccag taagtggtgc tttggtgctc 780
137 actgcggtag ttctctactg cctggcctgc agacatgttg cgaggtggaa aagaacaaga 840
138 aggaatgaag agacagtggg aactgaaagg ctgtccccta tctacttagg ctctgcgcaa 900
139 tcctcgggct ga                                                  912
142 <210> SEQ ID NO: 5
143 <211> LENGTH: 912
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147 <220> FEATURE:
148 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
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154 accaaaagag tgaaagaaac agtaatgcta tcctgtgatt acagcacatc cactgaagaa 180
155 ctgacaagcc ttcggatcta ttggcaaaag gatagtaaaa tggtgctggc catcctgcct 240
156 ggaaaagtgc aggtgtggcc tgagtacaag aaccgcacca tcactgacat gaacgataac 300
157 ccccgtattg tgatcctggc tctgcgcctg tcggacagtg gcacctacac ctgtgttatt 360
158 cagaagcctg ttttgaaagg ggcttataaa ctggagcacc tggcttccgt gaggttaatg 420
159 atcagagctg acttccctgt ccctaccata aatgatcttg gaaatccatc tcctaatatc 480
160 agaaggctaa tttgctcaac ctctggaggt tttccaaggc cccacctcta ctggttggaa 540
161 aatggagaag aattaaatgc taccaacaca acagtttccc aagatcctgg aactgagctc 600
162 tacatgatta gcagtgaact ggatttcaat gtgacaaata accacagcat cgtgtgtctc 660
163 atcaaatacg gggagctgtc ggtgtcacag atcttccctt ggagcaaacc caagcaggag 720
164 cctcccattg atcagcttcc attctgggtc attatcccag taagtggtgc tttggtgctc 780
165 actgcggtag ttctctactg cctggcctgc agacatgttg cgaggtggaa aagaacaaga 840
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172 <212> TYPE: DNA
173 <213> ORGANISM: Artificial Sequence
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Input Set : D:\216730us.app
Output Set: N:\CRF3\05232002\J032214.raw

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182 accaaaagag tgaaagaaac agtaatgcta tcctgtgatt acagcacatc cactgaagaa 180
183 ctgacaagcc ttcggatcta ttggcaaaag gatagtaaaa tggtgctggc catcctgcct 240
184 ggaaaagtgc aggtgtggcc tgagtacaag aaccgcacca tcactgacat gaacgataac 300
185 ccccgtattg tgatcctggc tctgcgcctg tcggacagtg gcacctacac ctgtgttatt 360
186 cagaagcctg ttttgaaagg ggcttataaa ctggagcacc tggcttccgt gaggttaatg 420
187 atcagagctg acttccctgt ccctaccata aatgatcttg gaaatccatc tcctaatatc 480
188 agaaggctaa tttgctcaac ctctggaggt tttccaaggc cccacctcta ctggttggaa 540
189 aatggagaag aattaaatgc taccaacaca acactgtccc aagatcctga aaccaagctc 600
190 tacatgatta gcagtgaact ggatttcaat gtgacaaata accacagcat cgtgtgtctc 660
191 atcaaatacg gggagctgtc ggtgtcacag atcttccctt ggagcaaacc caagcaggag 720
192 ccccccattg atcagcttcc attctgggtc attatcccag taagtggtgc tttggtgctc 780
193 actgcggtag ttctctaccg cccggcctgc agacatgttg cgaggtggaa aagaacaaga 840
194 aggaatgaag agacagtggg aactgaaagg ctgtcccta tctacttagg ctctgcgcaa 900
195 tcctcgggct ga                                                     912
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201 <213> ORGANISM: Artificial Sequence
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210 accaaaagag tgaaagaaac agtaatgcta tcctgtgatt acaacacatc cactgaagaa 180
211 ctgacaagcc ttcggatcta ttggcaaaag gatagtaaaa tggtgctggc catcctgcct 240
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213 ccccgtattg tgatcctggc tctgcgcctg tcggacagtg gcacctacac ctgtgttatt 360
214 cagaagcctg ttttgaaagg ggcttataaa ctggagcacc tggcttccgt gaggttaatg 420
215 atcagagctg acttccctgt ccctaccata aatgatcttg gaaatccatc tcctaatatc 480
216 agaaggctaa tttgctcaac ctctggaggt tttccaaggc cccacctcta ctggttggaa 540
217 aatggagaag aattaaatgc taccaacaca acagtttccc aagatcctgg aactgagctc 600
218 tacatgatta gcagtgaact ggatttcaat gtgacaaata accacagcat cgtgtgtctc 660
219 atcaaatacg gggagctgtc ggtgtcacag atcttccctt ggagcaaacc caagcaggag 720
220 cctcccattg atcagcttcc attctgggtc attatcccag taagtggtgc tttggtgctc 780
221 actgcggtag ttctctactg cctggcctgc agacatgttg cgaggtggaa aagaacaaga 840
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229 <213> ORGANISM: Artificial Sequence
231 <220> FEATURE:
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238 accaaaagag tgaaagaaac agtaatgcta tcctgtgatt acaacacatc cactgaagaa 180
239 ctgacaagcc ttcggatcta ttggcaaaag gatagtaaaa tggtgctggc catcctgcct 240
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245 aatggagaag aattaaatgc taccaacaca acagtttccc aagatcctgg aactgagctc 600
246 tacatgatta gcagtgaact ggatttcaat gtgacaaata accacagcat cgtgtgtctc 660
247 atcaaatacg gggagctgtc ggtgtcacag atcttccctt ggagcaaacc caagcaggag 720
248 cctcccattg atcagcttcc attctgggtc attatcccag taagtggtgc tttggtgctc 780
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266 accaaaagag tgaaagaaac agtaatgcta tcctgtgatt acagcacatc cactgaagaa 180
267 ctgacaagcc ttcggatcta ttggcaaaag gatagtaaaa tggtgctggc catcctgcct 240
268 ggaaaagtgc aggtgtggcc tgagtacaag aaccgcacca tcactgacat gaacgataac 300
269 ccccgtattg tgatcctggc tctgcgcctg tcggacaagg gcacctacac ctgcgtggtt 360
270 cagaagcctg ttttgaaagg ggcttataaa ctggagcacc tgacttccgt gaggttaatg 420
271 atcagagctg acttccctgt ccctaccata aatgatcttg gaaatccatc tcctaatatc 480
272 agaaggctaa tttgctcaac ctctggaggt tttccaaggc cccacctcta ctggttggaa 540
273 aatggagaag aattaaatgc taccaacaca acagtttccc aagatcctgg aactgagctc 600
274 tacatgatta gcagtgaact ggatttcaat gtgacaaata accacagcat cgtgtgtctc 660
275 atcaaatacg gggagctgtc ggtgtcacag atcttccctt ggagcaaacc caagcaggag 720
276 cctcccattg atcagcttcc attctgggtc attatcccag taagtggtgc tttggtgctc 780
277 actgcggtag ttctctactg cctggcctgc aggcatgttg cgaggtggaa aagaacaaga 840
278 aggaatgaag agacagtggg aactgaaagg ctgtccccta tctacttagg ctctgcgcaa 900
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283 <211> LENGTH: 912
284 <212> TYPE: DNA
285 <213> ORGANISM: Artificial Sequence
287 <220> FEATURE:
288 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
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RAW SEQUENCE LISTING ERROR SUMMARY   DATE: 05/23/2002
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Input Set : D:\216730us.app
Output Set: N:\CRF3\05232002\J032214.raw

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

```
Seq#:95;  N Pos. 223
Seq#:97;  N Pos. 929
Seq#:111; N Pos. 827
Seq#:153; N Pos. 893,894
Seq#:157; N Pos. 599
Seq#:174; Xaa Pos. 75
Seq#:176; Xaa Pos. 310
Seq#:190; Xaa Pos. 276
Seq#:232; Xaa Pos. 298
Seq#:236; Xaa Pos. 200
Seq#:284; Xaa Pos. 6,8,14,18,19,20,27,55,60,69,101,106,110,113,120,124,135
Seq#:284; Xaa Pos. 149,150,151,167,168,169,177,192,197,199,208,215,218,227
Seq#:284; Xaa Pos. 249,261,263,267,268,273
Seq#:287; Xaa Pos. 12,25,29,40,122,129,164,196,219,241
Seq#:290; Xaa Pos. 50,55,56,113,120,123,124,125,126,128,129,130,131,135,138
Seq#:290; Xaa Pos. 140,170,193,194,195,209,211,252,253
Seq#:292; Xaa Pos. 9,35,55,110,124,135,183,192,211,215,216,217,231,288,290
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VERIFICATION SUMMARY
PATENT APPLICATION: **US/10/032,214**

DATE: 05/23/2002
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Input Set : **D:\216730us.app**
Output Set: **N:\CRF3\05232002\J032214.raw**

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L:15 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:4459 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:95 after pos.:180
L:4532 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:97 after pos.:900
L:4923 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:111 after pos.:780
L:6089 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:153 after pos.:840
L:6198 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:157 after pos.:540
L:6665 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:174 after pos.:64
L:6851 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:176 after pos.:304
L:7802 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:190 after pos.:272
L:10636 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:232 after pos.:288
L:10886 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:236 after pos.:192
L:13590 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:284 after pos.:0
L:13593 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:284 after pos.:16
L:13599 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:284 after pos.:48
L:13602 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:284 after pos.:64
L:13608 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:284 after pos.:96
L:13611 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:284 after pos.:112
L:13614 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:284 after pos.:128
L:13617 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:284 after pos.:144
L:13620 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:284 after pos.:160
L:13623 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:284 after pos.:176
L:13626 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:284 after pos.:192
L:13629 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:284 after pos.:208
L:13632 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:284 after pos.:224
L:13635 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:284 after pos.:240
L:13638 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:284 after pos.:256
L:13641 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:284 after pos.:272
L:13841 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:287 after pos.:0
L:13844 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:287 after pos.:16
L:13847 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:287 after pos.:32
L:13862 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:287 after pos.:112
L:13865 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:287 after pos.:128
L:13871 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:287 after pos.:160
L:13877 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:287 after pos.:192
L:13880 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:287 after pos.:208
L:13886 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:287 after pos.:240
L:14165 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:290 after pos.:48
L:14177 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:290 after pos.:112
L:14180 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:290 after pos.:128
L:14186 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:290 after pos.:160
L:14192 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:290 after pos.:192
L:14195 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:290 after pos.:208
L:14201 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:290 after pos.:240
L:14361 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:292 after pos.:0
L:14367 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:292 after pos.:32
L:14370 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:292 after pos.:48
L:14379 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:292 after pos.:96
L:14382 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:292 after pos.:112
```

VERIFICATION SUMMARY   DATE: 05/23/2002
PATENT APPLICATION: **US/10/032,214**   TIME: 17:10:43

Input Set : **D:\216730us.app**
Output Set: **N:\CRF3\05232002\J032214.raw**

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L:14385 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:292 after pos.:128
L:14394 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:292 after pos.:176
L:14400 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:292 after pos.:208
```